COMMUNITY ORGANIZATIONS RESPONDING TO SURVEY ON ACCESS TO INFORMATION SUPERHIGHWAY	
Number of respondents	47
Percentage of respondents serving: Low-income communities	87.2%
Limited-English-speaking communities	78.7%
Latino communities	66.0%
Asian/Pacific Islander communities	42.6%
African American communities	29.8%
Average size of community served by respondents (number of people)	356,242
Examples of geographic locations covered	East Palo Alto, Fresno, Los Angeles, Madera, Martinez, Mountain View, Oakland, Oceanside, Salinas, San Bernardino, San Diego, San Francisco, San Jose, San Luis Obispo, Stockton
Types of community organizations represented	Educational programs Health clinics Literacy programs Social-service programs Rural legal assistance offices Employment programs Civil-rights programs

SUMMARY OF COMMUNITIES' NEED FOR ACCESS TO INFORMATION SUPERHIGHWAY AND ADVANCED TELECOMMUNICATIONS	
Average estimated percentage of respondents' constituents who need access to information-superhighway services	69.2%

PARTICULAR NEEDS OF CALIFORNIA'S LOW-INCOME, MINORITY, & LIMITED-ENGLISH-SPEAKING COMMUNITIES FOR ACCESS TO INFORMATION SUPERHIGHWAY AND ADVANCED TELECOMMUNICATIONS TECHNOLOGIES	
	PERCENTAGE OF RESPONDENTS
Educational programs and services	100.00%
Health care services and information	97.87%
Employment services and information	97.67%
Governmental services and reports	100.00%
Social services and information	97.78%
Community outreach and organization	95.65%
Collaboration with other organizations serving similar communities	100.00%
Electronic mail communications	95.65%
Video teleconferencing	81.40%

COMMUNITY ORGANIZATIONS' NEED AND DEMAND FOR ADVANCED TELECOMMUNICATIONS SERVICES

	Respondents Familiar with Service	Organizations Having Service	Organizations Would Use Service If Affordable
INTERNET	82.22%	37.21%	93.94%
DIGITAL SERVICES (ISDN)	26.67%	5.00%	82.76%
BROADBAND CAPACITY	22.73%	5.41%	62.50%
WIRELESS SERVICES	34.15%	5.41%	69.23%
VIDEO CONFERENCING	62.22%	5.00%	83.33%
FIBER OR FIBER-COAX	23.81%	0.00%	72.00%

IS THERE FULL & EQUAL ACCESS TO INFORMATION SUPERHIGHWAY IN LOW-INCOME, MINORITY & LIMITED-ENGLISH-SPEAKING COMMUNITIES?	
Percentage of respondents reporting Internet access publicly available in community served	32.6%
Percentage of respondents reporting community-based organizations in community served that have ISDN	2.1%
Percentage of respondents reporting that they have in-house: Internet	37.2%
Digital services (ISDN)	5.0%
Broadband capacity	5.4%
Wireless services	5.4%
Video conferencing	5.0%
Fiber or fiber-coax	0.0%

HOW IMPORTANT IS COMMUNITIES' FULL & EQUAL ACCESS TO INFORMATION SUPERHIGHWAY?	
Respondents concluding that their communities' full and equal access to information superhighway and advanced telecommunications technologies is: ESSENTIAL	63.0%
IMPORTANT	28.3%
HELPFUL BUT NOT IMPORTANT	4.3%
GENERALLY NOT RELEVANT	4.3%

EXHIBIT 4

A New Gulf in American Education, the Digital Divide

By GARY ANDREW POOLE

SAN JOSE, Calif. — At the bottom of the ramp here on the west side of town, two exits down Highway 280 from Apple Computer's headquarters, you can turn left and within a few blocks arrive at the Harker School, a pricey and prestigious private elementary and junior high school. Turn right, drive a mile or so, and you're near Anderson Elementary, a public school attended by children of one of the region's poorest communities.

John Dixon, a freckle-faced fifth grader at Anderson Elementary, calls himself a computer buff. But he must make do with the school's six-year-old I.B.M. 386 PC's, which are little more than electric typewriters compared with the multimedia machines he wishes the school could afford, "so we could look up stuff on the encyclopedia and see pictures."

A computer buff with distinctly better opportunities is Michael Giardina, a sixth grader at Harker, who uses the latest Apple Power Macintosh at school to manage his own World Wide Web page. He also surfs the Web for information on research topics like deforestation, sends his teachers E-mail with questions about homework and snickers over his friends' multimedia spoof of a television commercial about wigs.

"I'll probably go to Stanford this summer and take a programming class," said Michael, who is already

Gary Parker for The New York Times

Computer use and access vary widely at schools across the nation. At Anderson Elementary, students use six-year-old I.B.M. PC's, which pale in comparison to the multimedia units used at the nearby Harker School.

teaching himself C, a software programming language.

The digital divide between these two schools in the heart of Silicon Valley provides perhaps the most striking example anywhere in the nation of a widening gap — between children who are being prepared for lives and careers in the information age, and those who may find themselves held back.

At Harker, the children of the affluent are being prepared from an early age to take their place in the region's economy. At Anderson, students from rental properties and federally financed housing projects — many of them the children of Mexican, Vietnamese, Pakistani and, most recently, Bosnian immigrants — can hope, at best, for a basic traditional education.

"We don't need to tell parents, 'Computers are a way out,'" said Virginia Luhring, coordinator of Anderson's technology curriculum, who supplemented her self-taught computer skills with computer courses offered by the school district. "They understand that. But technology is not the highest thing on their priority list. Parents around here are worried about feeding their kids, not the latest software release."

Computers in schools, all schools, has become one of the hottest — and most hotly debated — education topics of the 1990's.

"We're facing a new illiteracy — computer illiteracy," said Malcolm Cohen, author of "Labor Shortages: As America Approaches the 21st Century" (University of Michigan Press). "Many, many children won't be prepared for the work force, because they can't use computers."

President Clinton envisions connecting every school to the Internet by the year 2000. But at present, only 3 percent of the nation's classrooms have Internet connections, according to Quality Education Data Inc., a research group in Denver. Linking all the classrooms could cost $30 billion or more, plus at least $5 billion in annual operating expenses — a combined figure that is more than the yearly budget of the Department of Education.

Few people expect such sums to be appropriated on the Federal level in the current budgetary climate, and even local schools in better financial circumstances than Anderson may have trouble coming up with computer money on their own.

Anderson, where nearly half of the 510 students are eligible for the Federal free-lunch program, qualifies for various grants, some of which can be spent on information technology. But such money can only go so far.

At Harker, for example, many of the students' parents work in the computer industry and freely lend technical expertise to the school. They also can buy computers for the school with an employee discount. Many of Harker's students cruise the Internet in a class taught by Sharon Meyers, who is married to an Intel Corporation engineer and was a Microsoft manager before she became a teacher a few years ago.

Those sorts of links are not available to Anderson.

"We have access to grants, but we don't have access to communities," said Barry Vitcov, Anderson's principal. He is hoping to find money for an Internet account for the school before the end of the academic year, but he worries about the cost at a time when there are other concerns, like fixing the school's roof, which leaks during downpours.

At Harker, ready access to the Internet abets "inquiry-based learning," a teaching philosophy in vogue among progressive schools. It is a departure from the traditional classroom, where the teacher imparted an established body of knowledge to students who would be judged by their ability to absorb and repeat the basic skills and facts conveyed to them.

Power Macs and the Internet for some; outdated technology for others.

In the new approach, students and teachers alike embark on a more open-ended inquiry. So if students are writing reports on Bosnia, for instance, they exchange E-mail with policy experts, participate in on-line foreign affairs forums and download images from CNN's Web site.

At Anderson, where teachers often are simply trying to communicate with children who may speak any of 19 languages at home, the old PC's are generally outfitted with software that emphasizes repetitive drills in reading and arithmetic.

"The way computers are used in the classroom — and the way the Internet will change their use — is really a profound commentary on education," said Michael Kirst, a professor of education at Stanford University. "The Internet is a prophetic example: richer kids with access to a home computer and to the Internet can use it as a means of exploration and discovery. Poorer kids without the Internet will just use a computer, in the classroom, for drill-and-practice exercises."

Private industry can help, but schools are a government responsibility, said Edward R. McCracken, chairman of one of the Valley's success stories, Silicon Graphics Inc., which has contributed $1 million to a local school-computer philanthropic program.

Mr. McCracken is co-chairman of a task force commissioned by President Clinton, which concludes in a soon-to-be-released report that the nation needs to spend $150 billion over the next decade to provide adequate information technology for its public schools. But the commission recommends that state and local governments foot the bill through tax increases and bond measures.

"The initiative puts pressure on local school boards," Mr. McCracken said. "We didn't try and solve the problems of poverty. We believe that's up to the process of government."

EXHIBIT 5

'High-Tech Barn-Raising' Shows Disparity of Schools

■ Education: Affluent areas have many volunteers to hook campuses to Internet. In poor ones, help is scarce.

By AMY HARMON
TIMES STAFF WRITER

With the click of a mouse, Allison, 7, fires up a video conference with a marine biologist in San Diego. Philip, 9, shoots e-mail to a poet he's never met, while Molly, 11, pastes eyebrows to the genetic model she built with a program her teacher found on the Internet.

The demonstration of online wonders in the classroom at Seeds University Elementary School in Westwood on Tuesday was part of a campaign to drum up volunteers for NetDay, an ambitious "high-tech barn-raising" aimed at wiring the state's 13,000 schools to the Internet this Saturday.

Inspired by President Clinton and Vice President Al Gore, who came to California in September and called for public-private cooperation to bring schools into the information age, NetDay's organizers have rounded up nearly 14,000 volunteers so far. Clinton and Gore plan to revisit the Bay Area this weekend, stopping at a Concord high school to help celebrate the day.

But across town from Seeds, at Esperanza Elementary near MacArthur Park, no one is planning to show up.

While Seeds has one computer for every five students, Esperanza has one for every 30. Only one of Esperanza's personal computers has a modem, and it takes it about

Please see COMPUTERS, A15

COMPUTERS: Internet Hookup Day Shows Disparities Among Schools

Continued from A1

1,000 times longer to transmit information than Seeds' direct Internet connection.

"We'd like to participate," says Esperanza Principal Rowena Lagrosa. "But we don't have a sponsor and we don't have the manpower. It's really a sad state of affairs."

NetDay's organizers—like many technology fans—believe the Internet can help to close the gap between the affluent and the less-privileged, especially among the young. In an age in which information increasingly equals power, they argue, the Internet makes it easier and cheaper to get that information than any medium that has come before it.

"If what separates one school from another is its ability to afford things, then access to the Internet starts to level things out," says Michael Kaufman, director of information technology at the KQED public television station in San Francisco.

But some observers fear that the push to raise the level of technology in schools could have the opposite effect, helping to create a technology underclass that would be even more disadvantaged. With well-intentioned NetDay volunteers flocking mostly to the schools that are already relatively well-equipped, it could be a classic case of the rich getting richer.

"Unless some entity steps in, this could be an accentuator of differences rather than a leveler," said Leonard Kleinrock, one of the Internet's inventors and a professor of computer science at UCLA. "[The Seeds school] is a good example of what the Net can offer, but it's a distorted example."

Few are eager to be too critical of NetDay. It is, after all, the first broad-based effort of its kind, one that signals a new form of activism and a recognition of the possible benefits that technology could have for millions of California children.

Kaufman and John Gage, chief scientist at the Mountain View-based computer maker Sun Microsystems, have spent the last several months attending school board meetings and lobbying corporations throughout the state to donate labor and equipment for NetDay.

More than 2,500 wiring kits have been donated, each containing enough wire and other hardware to hook up five classrooms and the library at an average school. MCI has donated free Internet accounts

to each school. That should help compensate for California's weak efforts in getting computers into schools: The state has about 14 students per computer, ranking 45th in the nation.

And the project has the strong support of Clinton, who last month announced a national mission to make all children "technologically literate" and proposed a $2-billion program to help accomplish that goal.

A recent U.S. Department of Education study found that while the number of schools that have Internet access has risen to 50%, only 31% of schools with primarily lower-income students have access to the network, while 62% of those whose students are mainly from affluent families are already hooked up.

That technological disparity among schools is mirrored on NetDay's color-coded electronic map, which shows a red dot for each school that has no sponsors or volunteers, and a green dot for those that do. In Los Angeles, the areas with the highest proportion of red dots are the city's south and east sides, while areas such as Santa Monica and other parts of the Westside are densely filled with green.

Castle Heights Elementary in Cheviot Hills, for example, has 18 volunteers listed, including a sponsor—"Friends of Castle Heights"—that is planning to pay for the wiring of the school. And while NetDay's goal is to wire five classrooms in each school, Castle Heights plans to hook up all 18 rooms, with a super-fast ISDN line.

The school has a dedicated computer teacher, and Dave Whitby, a parent who works as an Internet consultant, comes in on Friday afternoons to do Internet workshops for teachers and students. Jane Wishon, president of the PTA, said many of the school's 80 computers were donated by parents.

"We have five computers in our house, and when we upgraded last year, we brought in our old ones," said Wishon, who stumbled onto the NetDay site on her home PC. Her husband, a partner at Price Waterhouse, also secured a donation of 15 computers from his firm.

Roberto Correa, a math and science teacher at Huntington Park High School, found out about the project by chance through his brother, a Pacific Bell engineer. Correa has been trying to scrape together the funds to wire several classrooms. He estimates it would cost nearly $300,000, almost one-third in labor costs, and he had hoped NetDay would speed the process along. But no sponsor has come forward.

Because NetDay was organized almost solely over the Internet's World Wide Web, schools and parents with no access to the network were unlikely to hear about it. Each school in the state has a separate listing where volunteers can sign up. A kit to wire five classrooms, which can be ordered over the Net, costs about $350.

"Where are those sponsors who can donate the routers or cables that are necessary for us to network Huntington Park High School, network within our cluster, network so we can talk to the rest of the world?" asks Correa. "The people who know about this stuff are not the people in our community. We don't have companies here. Maybe the sponsors don't know Huntington Park exists."

Still, Correa has rounded up two alumni to chip in and string cable Saturday. In Compton, several principals contacted by The Times said they had not heard of NetDay, and on the Internet, no Compton schools have sponsors.

The more rural areas of California such as Monterey and Siskiyou counties are also heavily sprinkled with red. John Cradler, legislation policy advisor for WestEd, a regional education research laboratory, says the NetDay effort should be applauded, but it will take more than volunteers to wire the state.

"To me NetDay is a two-sided coin," says Cradler. "We need to reward the efforts of the White House to support improving the conditions of the schools, but we need to make them see that it needs to be done better next time."

Gage, who continues to be a tireless evangelist for the cause, says he's aware of the disparity. He wishes there were more volunteers. And he wishes the state's corporations had been more generous, both in donations of cash and equipment and in encouraging their employees to go out and help.

But, says Gage, every little bit helps.

"Yes, it's uneven," he says. "There are all red dots throughout Compton. But life is uneven. Our point is to show that unevenness and then deal with it. There's no such thing as NetDay stopping. This is just the beginning."

NetDay's Web page is at http://www.netday96.com. The project's toll-free number is 800-55NET96.

PROOF OF SERVICE

I, the undersigned, hereby declare:

1. I am a citizen of the United States of America over the age of eighteen years. My business address is 1535 Mission Street, San Francisco, California, 94103. I am not a party to this action.

2. On April 11, 1996, I caused service of a true and correct copy of this document, **Opening Comments on Universal Service Telecommunications Service in Low-Income, Minority, and Limited-English-Speaking Communities**, dated April 11, 1996, upon the persons below by depositing in the United States mail an envelope containing a true and correct copy of this document, with proper postage affixed, addressed to:

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I declare under penalty of perjury that the foregoing is true and correct.

Dated in San Francisco, California, this 11th day of April 1996.

DAISY MUHAMMAD
Declarant

CERTIFICATE OF MAILING

I, the undersigned, hereby declare:

1. I am a citizen of the United States of America over the age of eighteen years. My business address is 1535 Mission Street, San Francisco, California, 94103. I am not a party to this action.

2. On April 11, 1996, I caused service of a true and correct copy of this document, **Opening Comments on Universal Telecommunications Service in Low-Income, Minority, and Limited-English-Speaking Communities**, dated April 11, 1996, upon the participants in this proceeding by messenger or by depositing in the United States mail an envelope containing a true and correct copy of this document, with proper postage affixed, addressed to each of them.

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Dated in San Francisco, California, this 11th day of April 1996.

DAISY MUHAMMAD
Declarant